



**Rules and
Regulations for
the Classification
of Ships, July 2006**

Notice No. 1

Effective Date of Latest
Amendments:

See page 1

Issue date: July 2006

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RULES AND REGULATIONS FOR THE CLASSIFICATION OF SHIPS, *July 2006*

Notice No. 1

This Notice contains amendments within the following Sections of the *Rules and Regulations for the Classification of Ships, July 2006*. The amendments are effective on the dates shown:

Part	Chapter	Section	Effective date
1	1	7	1 April 2006
1	2	3	1 July 2006
1	3	1, 2, 3, 5, 6, 7, 8, 9	1 July 2006
Materials	4	5	Corrigendum
3	11	8	1 July 2006
3	16	5	Corrigendum
4	7	1	1 April 2006
4	7	6, 7, 8, 9	Corrigenda
4	8	15	Corrigendum
4	9	13	Corrigendum
5	23	8	Corrigendum
6	2	6	Corrigendum

It will be noted that the amendments also include corrigenda, which are effective from the date of this Notice.

The *Rules and Regulations for the Classification of Ships, July 2006* are to be read in conjunction with this Notice No. 1. The status of the Rules is now:

Rules for Ships
Notice No. 1

Effective date: July 2006
Effective dates: 1 April, 1 July 2006 & Corrigenda

Part 1, Chapter 1

General Regulations

Effective date 1 April 2006

■ Section 7

7.1 The Committee has power to adopt, and publish as deemed necessary, Rules relating to classification and has (in relation thereto) provided the following:

- (a) Except in the case of a special directive by the Committee, no new Regulation or alteration to any existing Regulation relating to character of classification or to class notations is to be applied to existing ships.
- (b) Except in the case of a special directive by the Committee, or where changes necessitated by mandatory implementation of International Conventions, Codes or Unified Requirements adopted by the International Association of Classification Societies are concerned, no new Rule or alteration in any existing Rule is to be applied compulsorily after the date on which the contract between the ship builder and ship owner for construction of the ship has been signed, nor within six months of its adoption. The date of 'contract for construction' of a ship is the date on which the contract to build the ship is signed between the prospective ship owner and the ship builder. This date is normally and the construction number (i.e. hull numbers) of all the vessels included in the contract are to be declared to the Committee by the party applying for the assignment of class to a newbuilding. The date of 'contract for construction' of a series of sister ships, including specified optional ships for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the prospective ship owner and the ship builder. In this section a 'series of sister ships' is a series of ~~are~~ ships built to the same approved plans for classification purposes, under a single contract for construction. The optional ships will be considered part of the same series of sister ships if the option is exercised not later than 1 year after the contract to build the series was signed. If a contract for construction is later amended to include additional ships or additional options, the date of 'contract for construction' for such ships is the date on which the amendment to the contract is signed between the prospective ship owner and the ship builder. The amendment to the contract is to be considered as a 'new contract'. Where it is desired to use existing approved ship or machinery plans for a new contract, written application is to be made to the Committee.

NOTE

Sister ships may have minor design alterations provided that such alterations do not affect matters related to classification.

- (c) All reports of survey are to be made by Surveyors authorised by LR to survey and report (hereinafter referred as the Surveyors) according to the form prescribed, and submitted for the consideration of the Committee, or its Sub-Committee of Classification, but the character assigned by the latter is to be subject to confirmation by the Committee or by the Chairman acting on behalf of the Committee.
- (d) Information contained in the reports of classification and statutory surveys will be made available to the relevant owner, National Administration, Port State Administration, P&I Club, hull underwriter and, if authorized in writing by that owner, to any other person or organization.
- (e) Information relating to the status of classification and statutory surveys and suspensions/withdrawals of class together with any associated conditions of class will be made available as required by applicable legislation or court order.
- (f) A Classification Executive consisting of senior members of LR's Classification Department staff shall carry out whatever duties that may be within the function of the Sub-Committee of Classification that the Sub-Committee of Classification assigns to it.

Part 1, Chapter 2

Classification Regulations

Effective date 1 July 2006

■ Section 3

Surveys – General

3.5 Existing ships – Periodical Surveys

3.5.14 At the request of an Owner, the Committee may agree that the Special Survey of the hull, for ships other than general dry cargo ships, bulk carriers, combination carriers, chemical tankers and oil tankers, be carried out on the Continuous Survey basis, all compartments of the hull being opened for survey and testing, in rotation, with an interval of five years between consecutive examinations of each part. In general, approximately one fifth of the Special Survey is to be completed each year and all the requirements of the particular hull Special Survey must be completed at the end of the five year cycle. ~~If the examination during Continuous Survey reveals any defects, further parts are to be opened up and examined as considered necessary by the Surveyor.~~ For examination of items listed in Ch 3,2.2.19 to 2.2.21 2.2.20, 2.2.24 and ~~Ch 3,3.2.2~~ Ch 3,3.2.6, 3.2.7 and 3.2.5 to 3.2.9, the intervals for inspection will require to be specially agreed. For ships more than 10 years of age, an examination of the ballast tanks is to be carried out twice in each five year cycle, i.e. once within the scope of the Intermediate Survey and once within the scope of the Continuous Survey. Ships which have satisfactorily completed the cycle will have a record entered in the *Register Book* indicating the date of completion which will not be later than five years from the last assigned date of Complete Survey of the hull. The agreement for surveys to be carried out on Continuous Survey basis may be withdrawn at the discretion of the Committee.

3.11 Ownership details

3.11.1 It is the responsibility of each Owner to inform LR in writing of any change to its contact details and in the event of a ship sale to supply details of the new Owners. If the new Owner of a ship cannot be properly identified and the contact details established then the class of that ship will be specially considered by the Committee.

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Periodical Survey Regulations

Effective date 1 July 2006

■ Section 1

General

1.5 Definitions

1.5.1 An **Oil Tanker** is a sea going self-propelled ship which is constructed generally with integral tanks ~~ship which is constructed~~ and is intended primarily to carry oil in bulk and includes ship types such as combination carriers (ore/oil and ore/bulk/oil ships, etc.). Where referred to in this Chapter, it shall also include double hull oil tankers as well as tankers with alternative structural arrangements, e.g. mid-deck designs, except where specified.

1.5.2 A **Double Hull Oil Tanker** is a sea going self-propelled ship which is constructed primarily for the carriage of oil in bulk, where the cargo tanks are protected by a double hull extending for the entire length of the cargo area, consisting of double side and double bottom spaces for the carriage of salt-water ballast.

1.5.3 A **Bulk Carrier** is a sea going self-propelled ship which is constructed generally with single deck, double bottom, topside tanks and hopper side tanks and with single side skin construction in the cargo length area ~~in cargo spaces~~, and is intended primarily to carry dry cargo in bulk and includes ship types such as ore carriers. Where referred to in this Chapter, it shall also include double skin bulk carriers except where specified.

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~~1.5.4~~ **1.5.4** A **Double Skin Bulk Carrier** is a sea going self-propelled ship which is constructed generally with single deck, double bottom, topside tanks and hopper side tanks and with double side skin construction in the cargo length area (regardless of the width of the wing space) in cargo spaces, and is intended primarily to carry dry cargo in bulk and includes such types as ore carriers, in which all cargo holds are bounded by a double side skin (regardless of the width of the wing space).

1.5.5 An Ore Carrier is a sea going self-propelled ship which is constructed generally with single deck, two longitudinal bulkheads and a double bottom throughout the cargo length area and intended primarily to carry ore cargoes in the centre holds only.

~~1.5.5~~ **1.5.6** A **Chemical Tanker** is a sea going self-propelled ship constructed generally with integral tanks or adapted and being single or double hull construction, or having alternative structural arrangements, used primarily for the carriage in bulk of any liquid product listed in Chapter 17 of the *International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, IBC Code*.

~~1.5.6~~ **1.5.7** A **Gas Carrier** is a cargo ship constructed or adapted and used for the carriage in bulk of any liquefied gas or other products of flammable nature listed in Chapter 19 of the *International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk*.

~~1.5.7~~ **1.5.8** A **Ballast Tank** is a tank which is used solely for the carriage of salt-water ballast. For bulk carriers, a space which is used for both cargo and salt-water ballast will be treated as a salt-water ballast tank when substantial corrosion has been found in that space. For double skin bulk carriers, the double side tank is to be considered as a separate tank even if it is connected to either the topside or hopper side tank. For oil tankers and chemical tankers, a combined tank which is used for both cargo and salt-water ballast as a routine part of the ship's operation will be treated as a ballast tank. A cargo tank which in exceptional cases may carry salt-water ballast during severe weather conditions and is not designated as a combined cargo/ballast tank will be treated as a cargo tank.

~~1.5.8~~ **1.5.9** **Spaces** are separate compartments such as holds and tanks.

~~1.5.9~~ **1.5.10** An **Overall Survey** is a survey intended to report on the overall condition of the hull structure and to determine the extent of additional Close-up Surveys.

~~1.5.10~~ **1.5.11** A **Close-up Survey** is a survey where the details of structural components are within the close visual inspection range of the Surveyor, i.e. normally within reach of hand.

~~1.5.11~~ **1.5.12** A **Transverse Section** includes all longitudinal members such as plating, longitudinals and girders at the deck, side, bottom, inner bottom, inner side, hopper side, top wing side and longitudinal bulkhead, where fitted. For transversely framed ships, a transverse section includes adjacent frames and their end connections in way of transverse sections.

~~1.5.12~~ **1.5.13** **Representative Spaces** are those which are expected to reflect the condition of other spaces of similar type and service and with similar corrosion prevention systems. When selecting representative spaces, account is to be taken of the service and repair history on board and identifiable critical areas **Critical Structural Areas**.

~~1.5.13~~ **1.5.14** **Critical Structural Areas** are locations vulnerable to substantial corrosion, buckling and/or fatigue cracking which have been identified from calculations to require monitoring or from the service history of the subject ship or from similar ships or sister ships, if applicable, to be sensitive to cracking, buckling or corrosion which would impair the structural integrity of the ship.

~~1.5.14~~ **1.5.15** **Substantial Corrosion** is wastage of individual plates and stiffeners in excess of 75 per cent of allowable margins, but within acceptable limits.

~~1.5.15~~ **1.5.16** ~~A Protective Coating~~ **A Corrosion Prevention System** is normally considered a full hard protective coating. This is usually to be a hard an epoxy coating or equivalent. Other systems (e.g. soft coatings) may be considered acceptable as alternatives provided they are applied and properly maintained in compliance with the manufacturer's specification.

~~1.5.16~~ **1.5.17** For the application of requirements outlined in Sections 2, 3, 4 and 5, a general dry cargo ship is a self-propelled ship of 500 gross tonnes or above, constructed generally with a 'tween deck and intended to carry solid cargoes. This excludes bulk carriers, refrigerated cargo ships, roll on-roll off ships, livestock carriers, dock/deck ships and ships dedicated for the carriage of containers, forest products (but not log or timber carriers), wood chips and cement.

~~1.5.17~~ **1.5.18** **Coating Condition** is defined as follows:

GOOD	condition with only minor spot rusting affecting not more than 20 per cent of areas under consideration, e.g. on a deck transverse, side transverse, on the total area of platings and stiffeners on the longitudinal structure between these components, etc.
FAIR	condition with local breakdown at edges of stiffeners and weld connections and/or light rusting affecting 20 per cent or more of areas under consideration.
POOR	condition with general breakdown of coating affecting 20 per cent or more of areas under consideration or hard scale affecting 10 per cent or more of area under consideration.

~~1.5.18~~ **1.5.19** A **Prompt and Thorough Repair** is a permanent repair completed at the time of survey to the satisfaction of the Surveyor, therein removing the need for the imposition of any associated condition of class.

~~1.5.19~~ **1.5.20** Bulk carriers with hybrid cargo hold arrangements are to have single skin cargo holds surveyed in accordance with the requirements for single skin bulk carriers and the double skin cargo holds surveyed in accordance with the requirements for double skin bulk carriers.

1.5.21 Special consideration or specially considered (in connection with close-up surveys and thickness measurements) means sufficient close-up inspection and thickness measurements are to be taken to confirm the actual average condition of the structure under the coating.

1.5.22 Air pipe heads installed on the exposed decks are those extending above the freeboard deck or superstructure decks.

1.5.23 The Cargo Area or Cargo Length Area is that part of the ship which contains all cargo holds and adjacent areas including fuel tanks, cofferdams, ballast tanks and void spaces. For oil tankers and chemical tankers, the **Cargo Area** is that part of the ship which contains cargo tanks, slop tanks and cargo/ballast pump-rooms, cofferdams, ballast tanks and void spaces adjacent to cargo tanks and also deck areas throughout the entire length and breadth of the part of the ship over the above mentioned spaces.

1.6 Preparation for survey and means of access

1.6.7 Where soft coatings have been applied, safe access is to be provided for the Surveyor to verify the effectiveness of the coating and to carry out an assessment of the conditions of internal structures which may include spot removal of the coating. When safe access cannot be provided, the soft coating is to be removed.

1.6.8 A survey planning meeting is to be held prior to the commencement of Intermediate Survey and Special Survey. In addition to this the following is applicable:

- (a) For ships assigned the notation **ESP**, the Owner is to prepare a Survey Programme prior to the commencement of any part of the Intermediate Survey on ships over 10 years of age and Special Survey.
- (b) The Survey Programme is to be in a written format and submitted to LR at least six months in advance of the survey, see 6.3, 7.3 and 8.3. The Survey Programme at Intermediate Survey may consist of the Survey Programme agreed for the previous Special Survey supplemented by the Executive Hull Summary of that Special Survey and later relevant survey reports. The survey programme is to be worked out taking into account any amendments to the survey requirements implemented after the previous Special Survey.

1.7 Thickness measurement at surveys

1.7.2 ~~Prior to the commencement of the survey a~~ Further to the requirements of 1.6.8 a survey planning meeting is to be held between the attending Surveyor(s), the Owner's representative and the thickness measurement firm's representative, so as to ensure the safe and efficient execution of the surveys and thickness measurements to be carried out on board.

1.8 Repairs

1.8.1 Any damage in association with wastage over the allowable limit (including buckling, grooving, detachment or fracture), or extensive areas of wastage over the allowable limits, which affects or, in the opinion of the Surveyor, will affect the ship's structural, watertight or weathertight integrity, is to be promptly and thoroughly repaired. Areas to be considered include, (where fitted):

- side shell frames, their end attachments ~~or~~ and adjacent shell plating;
- deck structure and deck plating;
- bottom structure and bottom plating;
- side structure and side plating;
- inner bottom structure and inner bottom plating;
- inner side structure and inner side plating;
- watertight or oiltight bulkheads;
- hatch covers ~~or~~ and hatch coamings.

For locations where adequate repair facilities are not available, consideration may be given to allow the ship to proceed directly to a repair facility. This may require discharging the cargo and/or temporary repairs for the intended voyage.

1.8.2 Additionally, when a survey results in the identification of ~~substantial corrosion or~~ structural defects ~~or corrosion~~, either of which, in the opinion of the Surveyor, will impair the ship's fitness for continued service, remedial measures are to be implemented before the ship continues in service.

■ Section 2 Annual Surveys – Hull and machinery requirements

2.2 Annual Surveys

2.2.1 The Surveyor is to be satisfied regarding:

- (a) The efficient condition of hatchways on freeboard and superstructure decks, weather deck plating, ~~ship side plating above the waterline~~, ventilator coamings and air pipes, exposed casings, fiddle openings, skylights, flush deck scuttles, deckhouses and companionways, superstructure bulkheads, side, bow and stern doors, side scuttles and deadlights, chutes and other openings, together with all closing appliances and flame screens. In addition, the Surveyor is to externally examine all air pipe heads installed on exposed decks and examine the ~~weld connection between air pipes and deck plating~~.
- (b) The efficient operating condition of mechanically-operated hatch covers including stowage, ~~fit, securing, locking, coaling and operational testing of hydraulic power components, wires, chains, etc.~~ and securing in open condition; proper fit and efficiency of sealing in closed condition; operational testing of hydraulic and power components, wires, chains and link drives.
- (c) The efficient condition of scuppers and sanitary discharges (so far as practicable); valves on discharge lines (so far as practicable) and their controls; guard rails and bulwarks; freeing ports, gangways and life-lines; fittings and appliances for timber deck cargoes.
- (d) The efficient condition of bilge level detection and alarm systems on ships assigned a **UMS** notation.

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~~2.2.2 Cargo hatch covers and coamings are to be examined to ensure that no alterations have been made to the approved arrangements:~~

- ~~(a) Mechanically-operated cargo hatch covers are to be tested for tightness and to confirm the satisfactory condition of securing and sealing arrangements; drainage channels; operating mechanisms; tracks and wheels.~~
- ~~(b) Cargo hatch covers of the portable type (i.e. wood or steel pontoons) are to be examined to confirm that the covers and closing appliances are in a satisfactory condition.~~
- ~~(c) For **general dry cargo ships** and **bulk carriers**, in addition to the above, the steel cargo hatch covers, coamings and stiffeners are to be subjected to a close-up examination.~~

2.2.2 The Surveyor is to obtain confirmation that no unapproved changes have been made to the hatch covers, hatch coamings and their securing and sealing devices since the previous survey:

- (a) Mechanically-operated steel covers are to be tested to confirm the satisfactory condition of:
 - hatch covers;
 - tightness devices of longitudinal, transverse and intermediate cross junctions (gaskets, gasket lips, compression bars, drainage channels);
 - clamping devices, retaining bars, cleating;
 - chain or rope pulleys;
 - guides;
 - guide rails and track wheels;
 - stoppers, etc;
 - wires, chains, gypsies, tensioning devices;
 - hydraulic system essential to closing and securing;
 - safety locks and retaining devices.
- (b) Cargo hatch covers of the portable type (i.e. wood or steel pontoons) are to be examined to confirm the satisfactory condition where applicable, of:
 - wooden covers and portable beams, carriers or sockets for the portable beam, and their securing devices;
 - steel pontoons;
 - tarpaulins;
 - cleats, battens and wedges;
 - hatch securing bars and their securing devices;
 - loading pads/bars and the side plate edge;
 - guide plates and chocks;
 - compression bars, drainage channels and drain pipes (if any).
- (c) The Surveyor is to confirm the satisfactory condition of hatch coaming plating and their stiffeners, where applicable.
- (d) For **general dry cargo ships** and **bulk carriers**, in addition to the above, the steel cargo hatch covers, coamings and stiffeners are to be subjected to a close-up examination.

2.2.21 The Surveyor is to carry out an examination and thickness measurement of structure identified at the previous Special Survey or Intermediate Survey as having substantial corrosion, ~~see Sections 5, 6, 7 and 8~~ as defined in 1.5. This requirement does not apply to cargo tanks of oil tankers and chemical tankers. The extent of thickness measurements is to be increased in accordance with the appropriate tables in Sections 5, 6, 7 or 8, as applicable, to determine the full extent of the corrosion pattern. The survey will not be considered complete until these additional thickness measurements have been carried out.

(Part only shown)

2.2.22 For **oil tankers** (including ore/bulk/oil ships and ore/oil ships), in addition to the applicable requirements of 2.2.1 to 2.2.21, the following are to be dealt with where applicable:

- (p) For ~~ships greater than 15 years of age, all~~ **single hull oil tankers**, ballast tanks adjacent to (i.e. with a common plane boundary) a cargo tank with any means of heating are to be examined. Thickness measurement is to be carried out where considered necessary by the Surveyor. Special consideration may be given by the Surveyor to those tanks ~~or spaces~~ where the coatings ~~are~~ **was** found in GOOD condition, as defined in 1.5, at the previous Intermediate or Special Survey.

(Part only shown)

2.2.23 For **chemical tankers**, in addition to the applicable requirements of 2.2.1 to 2.2.22, the following are to be dealt with, where applicable:

- ~~(u) For ships greater than 15 years of age, all ballast tanks adjacent to (i.e. with a common plane boundary) a cargo tank with any means of heating are to be examined. Thickness measurement is to be carried out where considered necessary by the Surveyor. Special consideration may be given by the Surveyor to those tanks or spaces where the coatings are found in GOOD condition, as defined in 1.5, at the previous Intermediate or Special Survey.~~

- ~~(u)~~ (u) For ballast tanks, in areas where substantial corrosion, as defined in 1.5, has been noted then additional measurements are to be carried out in accordance with Tables 3.8.4, 3.8.5, 3.8.6 and 3.8.7. The survey will not be considered complete until these additional thickness measurements have been carried out.

2.2.26 For **general dry cargo ships**, in addition to the applicable requirements of 2.2.1 to 2.2.21, the following are required for ships over 10 years of age:

- (a) Overall survey of one forward and one after cargo hold and their associated 'tween deck spaces.
- (b) Where considered necessary by the Surveyor, thickness measurement is to be carried out. Where the results of thickness measurement indicate substantial corrosion, the extent of thickness measurement should be in accordance with Section 5, Table 3.5.6. **The survey will not be considered complete until these additional thickness measurements have been carried out.**

(Part only shown)

2.2.27 For **general dry cargo ships**, in addition to the applicable requirements of 2.2.1 to 2.2.21, the following are required for ships over 15 years of age:

- (e) Where considered necessary by the Surveyor, thickness measurement is to be carried out. Where the results of thickness measurement indicate substantial corrosion, the extent of thickness measurement should be in accordance with Table 3.5.6 in Section 5. The survey will not be considered complete until these additional thickness measurements have been carried out.

Section 3

Intermediate Surveys – Hull and machinery requirements

3.2 Intermediate Surveys

3.2.2 A general examination of salt-water ballast tanks is to be carried out as required by 3.2.6 and 3.2.7. ~~For ships other than oil tankers and chemical tankers, if such examinations reveal no visible structural defects then the examination may be limited to a verification that the protective coating remains in GOOD or FAIR condition as defined in 1.5. When considered necessary by the Surveyor, thickness measurement of the structure is to be carried out.~~

3.2.4 For **oil tankers** (including ore/oil and ore/bulk/oil ships) and **chemical tankers**, ~~all salt water ballast tanks where a protective coating is found to be in POOR condition, as defined in 1.5, and it has not been repaired, where a soft coating has been applied or where a protective coating was not applied from the time of construction, the tank in question is to be examined and gauged as necessary at Annual Surveys~~ salt-water ballast tanks are to be examined and gauged as necessary at Annual Surveys where:

- (a) A hard protective coating has not been applied from the time of construction; or
- (b) A soft coating has been applied; or
- (c) Substantial corrosion is found within the tank, or
- (d) The hard protective coating is found to be in less than GOOD condition, as defined in 1.5, and the hard protective coating is not repaired to the satisfaction of the Surveyor; or
- (e) For **single hull oil tankers**, the tank has a common plane boundary with a cargo tank with any means of heating.

3.2.5 For salt-water ballast tanks on those ships not listed in 3.2.4, where a **hard** protective coating is found to be in POOR condition, as defined in 1.5, and it has not been repaired, where a soft coating has been applied or where a protective coating was not applied from the time of construction the following requirements are applicable:

- (a) For salt-water ballast tanks, other than independent double bottom tanks, maintenance of class will be subject to the spaces in question being examined and gauged as necessary at Annual Surveys.
- (b) For independent salt-water double bottom tanks, maintenance of class may, at the discretion of the **Committee Surveyor**, be subject to the spaces in question being examined and gauged as necessary at Annual Surveys.

NOTE

Independent double bottom tanks are those double bottom tanks which are separate from topside tank, side tanks or deep tanks.

3.2.6 For ships over 5 years of age and up to 10 years of age, representative salt-water ballast tanks are to be examined. In addition to this, the following requirements are applicable:

- (a) ~~For **bulk carriers, oil tankers** (including ore/oil and ore/bulk/oil ships) and **chemical tankers**, an Overall Survey of representative salt water ballast tanks, as selected by the Surveyor is to be carried out. For **double skin dry bulk cargo ships** (bulk carriers), the selected tanks are to include the fore peak tank, aft peak tank and three other tanks.~~
- (b) ~~For tanks, where a protective coating is found to be in POOR condition, as defined in 1.5, or other defects are found, where a soft coating has been applied or where a protective coating was not applied from the time of construction, the examination is to be extended to other ballast tanks of the same type.~~
- (a) For **general dry cargo ships**, an Overall Survey of representative salt-water ballast tanks, as selected by the Surveyor is to be carried out.
- (b) For **bulk carriers**, an Overall Survey of representative salt-water ballast tanks, as selected by the Surveyor is to be carried out. The selected tanks are to include the fore peak tank, aft peak tank and a number of other tanks, taking into account the total number and type of ballast tanks.
- (c) For **single hull oil tankers** (including ore/oil and ore/bulk/oil ships), an examination of all salt-water ballast tanks is to be carried out. Where considered necessary by the Surveyor, thickness measurement and testing are to be carried out to ensure the structural integrity remains effective.
- (d) For **double hull oil tankers** and **chemical tankers**, an Overall Survey of representative salt-water ballast tanks, as selected by the Surveyor is to be carried out. If the survey reveals no visible defects, the examination may be limited to a verification that the hard protective coating remains in GOOD condition, as defined in 1.5.

~~3.2.11 For **oil tankers** (including ore/oil and ore/bulk/oil ships), in addition to 3.2.10, the following are required for ships over 10 years of age:~~

- (a) ~~Overall survey of at least two representative cargo tanks.~~
- (b) ~~Overall survey of all salt water ballast tanks, including any combined cargo/ballast tanks.~~
- (c) ~~Close up survey of salt water ballast tanks to the same extent as the previous Special Survey and two combined cargo/ballast tanks. Where protective coatings are found to be in GOOD condition, as defined in 1.5, the extent of Close up survey may be specially considered.~~
- (d) ~~The thickness measurement requirements of 3.2.8 are to be complied with. In areas where substantial corrosion, as defined in 1.5, has been noted then additional measurements are to be carried out in accordance with Tables 3.7.7 to 3.7.15, as applicable. The survey will not be considered complete until these additional thickness measurements have been carried out.~~
- (e) ~~Machinery and boiler spaces including tank tops, bilges and cofferdams, sea suction and overboards are to be generally examined.~~

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~~3.2.12~~ **3.2.11** For **oil tankers** (including ore/oil and ore/bulk/oil ships), in addition to 3.2.10 ~~and 3.2.11~~, the following are required for ships over ~~15~~ 10 years of age:

- A survey to the same extent as the previous Special Survey (applicable only to ESP surveys, see 7.1.2).
- Pressure testing of cargo and ballast tanks ~~is~~ and the requirements for the longitudinal strength evaluation (see 7.7.3) are to be carried out if deemed necessary by the attending Surveyor.

(Part only shown)

~~3.2.13~~ **3.2.12** For **chemical tankers**, in addition to the applicable requirements of 3.2.1 to 3.2.9 the following are to be dealt with where applicable:

~~3.2.14~~ For ~~chemical tankers~~, in addition to 3.2.13, the following are required for ships over 10 years of age:

- ~~Overall Survey of at least two representative cargo tanks including general examination of fittings such as valves and instrumentation.~~
- ~~Overall Survey of all salt water ballast tanks, including any combined cargo/ballast tanks.~~
- ~~Close-up survey of salt water ballast tanks to the same extent as the previous Special Survey and two combined cargo/ballast tanks. Where protective coatings are found to be in GOOD condition, as defined in 1.5, the extent of Close-up survey may be specially considered.~~
- ~~The thickness measurement requirements of 3.2.8 are to be complied with. In areas where substantial corrosion, as defined in 1.5, has been noted then additional measurements are to be carried out in accordance with Tables 3.8.4, 3.8.5, 3.8.6 and 3.8.7. The survey will not be considered complete until these additional thickness measurements have been carried out.~~
- ~~Machinery and boiler spaces including tank tops, bilges and cofferdams, sea suction and overboards are to be generally examined.~~

~~3.2.15~~ **3.2.13** For **chemical tankers**, in addition to ~~3.2.13~~ and ~~3.2.14~~ **3.2.12**, the following are required for ships over ~~15~~ 10 years of age:

- A survey to the same extent as the previous Special Survey (~~see Section 8~~) (applicable only to ESP surveys, see 8.1.2).
- Pressure testing of cargo and ballast tanks is to be carried out if deemed necessary by the attending Surveyor.

(Part only shown)

~~3.2.16~~ **3.2.14** For **bulk carriers**, in addition to the applicable requirements of 3.2.1 to 3.2.9, the following are to be dealt with on ships over five years of age:

- Thickness measurement of those areas subject to Close-up Survey, to determine both general and local corrosion levels. The extent of thickness measurement may be ~~dispensed with~~ specially considered provided the Surveyor is satisfied that there is no structural diminution and the protective coating, where provided, remains ~~effective~~ in GOOD condition, as defined in 1.5.

~~3.2.17~~ **3.2.15** For **bulk carriers**, in addition to the applicable requirements of 3.2.1 to 3.2.9, the following is required for ships over 10 years of age:

- A survey to the ~~same~~ extent as the previous special Survey (applicable to ESP surveys, see 6.1.2).
- Pressure testing of ~~ballast~~ all tanks ~~is~~ and the internal examination of fuel oil tanks are to be carried out if deemed necessary by the Surveyor.

~~3.2.18~~ **3.2.16** For **dry cargo ships** over 15 years old (other than bulk carriers and general dry cargo ships), in addition to the applicable requirements of 3.2.1 to 3.2.8, an Overall Survey of selected cargo holds is to be carried out ~~is required of a forward cargo hold and an after cargo hold.~~

~~3.2.19~~ **3.2.17** For **general dry cargo ships**, in addition to the applicable requirements of 3.2.1 to 3.2.9, the following is required for ships over 5 years of age:

- An overall survey of one forward and one after cargo hold and their associated 'tween deck spaces.

~~3.2.20~~ **3.2.18** For **general dry cargo ships**, in addition to the applicable requirements of 3.2.1 to 3.2.9, the following are required for ships over 10 years of age:

- An overall survey of all cargo holds and 'tween deck spaces.
- Where considered necessary by the Surveyor, thickness measurement is to be carried out. Where the results of thickness measurement indicate substantial corrosion, the extent of thickness measurement should be in accordance with Table 3.5.6 in Section 5. ~~The survey will not be considered complete until these additional thickness measurements have been carried out.~~

~~3.2.21~~ **3.2.19** For **general dry cargo ships**, in addition to the applicable requirements of 3.2.1 to 3.2.9, the following are required for ships over 15 years of age:

- A survey to the same extent as the previous special Survey (applicable only to surveys of the hull structure and piping systems in way of the cargo holds, cofferdams, pipe tunnels and void spaces within the cargo area and all salt water ballast tanks).
- ~~Pressure testing of ballast tanks and cargo holds used for ballast water is.~~ Tank testing, survey of automatic air pipe heads and internal examination of fuel oil, lubricating oil and fresh water tanks are to be carried out if deemed necessary by ~~the~~ Surveyor.

~~3.2.22~~ **3.2.20** For **ship-borne barges**, where Intermediate Surveys are permitted as an alternative to Annual Surveys and Docking Surveys, all the hatch covers are to be hose tested at every survey. The external surfaces of the barges are to be surveyed at these surveys.

~~3.2.23~~ **3.2.21** For **liquefied gas ships**, see Section 9.

Table 3.3.1 Bulk carriers – Intermediate Surveys

Ships between 5 and 10 years old	Ships between 10 and 15 years old	Ships greater than 15 years old
(a) Overall Survey of all cargo holds, see Notes 1, 2, 3 and 4 (b) Close-up Survey to establish the condition of at least 25 per cent of the cargo hold side shell frames including their upper and lower end attachments, adjacent shell plating and the transverse bulkheads in the forward cargo hold and one other selected cargo hold on single skin ships, see Notes 1, 3 and 4.	A survey to the same extent as the previous Special Survey (applicable only to ESP surveys, see 6.1.2), see Notes 3 and 4 Note 3 .	A survey to the same extent as the previous Special Survey (applicable only to ESP surveys, see 6.1.2), see Notes 3 and 4 Note 3 .
NOTES The requirements in this Table apply to both single skin and double skin ships, unless stated otherwise. <ol style="list-style-type: none"> For single skin ships, where considered necessary by the Surveyor as a result of the Overall and Close-up Survey, the Survey is to be extended to include a Close-up Survey of all of the side shell frames and adjacent shell plating of that cargo hold, as well as a Close-up Survey of sufficient extent of all remaining cargo holds. For double skin ships, where considered necessary by the Surveyor as a result of the Overall Survey, the Survey is to be extended to include a Close-up Survey of those areas of structure in cargo holds selected by the Surveyor. Thickness measurement is to be carried out of sufficient extent to determine the level of corrosion of those areas subject to Close-up Survey. Where the results of thickness measurement indicate substantial corrosion, the extent of thickness measurement should be in accordance with Section 6, Tables 3.6.4, 3.6.5, 3.6.6, 3.6.7, 3.6.8 and 3.6.9 as applicable. The survey will not be considered complete until these additional thickness measurements have been carried out. Where For ships between 5 and 10 years old where hard protective coatings in cargo holds are found to be in good GOOD condition, as defined in 1.5, the extent of Close-up Survey and thickness measurement may be specially considered. Prior to any coating or recoating of cargo holds, scantlings are to be confirmed by thickness measurement with the Surveyor in attendance. 		

Section 5

Special Survey – General – Hull requirements

5.1 General

5.1.1 The survey is to be of sufficient extent to ensure that the hull and related piping are in satisfactory condition and are fit for their intended purpose for the new period of class of five years to be assigned, subject to proper maintenance and operation and to periodical surveys being carried out as required by the Regulations.

5.1.5 During the Docking Survey, for **general dry cargo ships**, oil tankers (including ore/oil ships and ore/bulk/oil ships), chemical tankers and bulk carriers, the overall and close-up surveys and thickness measurements, as applicable, of the lower portions of the cargo spaces and ballast tanks are to be carried out as required, if not already surveyed.

5.3 Examination and testing

5.3.3 For **oil tankers** (including ore/oil and ore/bulk/oil ships) and **chemical tankers**, **all salt-water ballast tanks** where a protective coating is found to be in **POOR** condition, as defined in 1.5, and it has not been repaired, where a soft coating has been applied or where a protective coating was not applied from the time of construction, the tank in question is to be examined and gauged as necessary at Annual Surveys. the condition of the corrosion prevention system, where provided, is to be examined in cargo tanks and salt-water ballast tanks. Thickness measurements are to be carried out as deemed necessary by the Surveyor. Ballast tanks are to be examined and gauged as necessary at Annual Surveys where:

- (a) A hard protective coating has not been applied from the time of construction, or
- (b) A soft coating has been applied, or
- (c) Substantial corrosion is found within the tank, or
- (d) The hard protective coating is found to be in less than **GOOD** condition, as defined in 1.5, and the hard protective coating is not repaired to the satisfaction of the Surveyor, or
- (e) For **single hull oil tankers**, the tank has a common plane boundary with a cargo tank with any means of heating.

5.3.4 For **salt-water ballast tanks** on those ships not listed in 5.3.3, where the condition of the corrosion prevention system, where provided, in salt-water ballast tanks is to be examined. Thickness measurements are to be carried out as deemed necessary by the Surveyor. Where a hard protective coating is found to be in **POOR** condition, as defined in 1.5, and it has not been repaired, where a soft coating has been applied or where a protective coating was not applied from the time of construction the following requirements are applicable:

- (a) For salt-water ballast tanks, other than independent double bottom tanks, maintenance of class will be subject to the spaces in question being examined and gauged as necessary at Annual Surveys.
- (b) For independent salt-water double bottom tanks, maintenance of class may, at the discretion of the **Committee Surveyor**, be subject to the spaces in question being examined and gauged as necessary at Annual Surveys.

NOTE

Independent double bottom tanks are those double bottom tanks which are separate from topside tank, side tanks or deep tanks.

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5.3.5 Double bottom, deep, ballast, peak and other tanks, including cargo holds assigned also for the carriage of salt water ballast, are to be tested with a head of liquid to the top of air pipes or to ~~near~~ the top of hatches for ballast/cargo holds. Boundaries of oil fuel, lubricating oil and fresh water tanks are to be tested with a head of liquid to the ~~maximum filling level of the tank~~ highest point that liquid will rise under service conditions. Tank testing of oil fuel, lubricating oil and fresh water tanks may be specially considered based upon a satisfactory external examination of the tank boundaries, and a confirmation from the Master stating that the pressure testing has been carried out according to the requirements with satisfactory results. ~~Surveyors may extend the testing as deemed necessary.~~

5.3.11 Mechanically-operated hatch covers are to be tested to confirm satisfactory operation including stowage; ~~proper fit of sealing arrangements; operational testing of power components, wires and chains~~ and securing in open condition; proper fit and efficiency of sealing in closed conditions; operational testing of hydraulic and power components, wires, chains and link drives. The effectiveness of sealing arrangements of all hatch covers is to be checked by carrying out hose testing or equivalent.

5.3.17 The hand pumps, suction, watertight doors, air and sounding pipes are to be examined. In addition, the Surveyor is to internally and externally examine air pipe heads in accordance with the requirements of Table 3.5.7.

5.3.20 All bilge and ballast piping systems are to be examined and operationally tested to working pressure, to the satisfaction of the Surveyor, to ensure that tightness and condition remain satisfactory.

5.4 Overall Survey

5.4.4 All piping systems within the tanks and spaces indicated in 5.4.2 are to be examined and ~~operationally tested under working conditions~~ to working pressure to the satisfaction of the Surveyor, to ensure that ~~the tightness and~~ conditions remain satisfactory.

5.5 Close-up Survey

5.5.2 The minimum requirements for Close-up Survey are given in Table 3.5.4. ~~The Close-up Survey may be extended, as deemed necessary by the Surveyor, after taking into account the maintenance of the spaces under survey, the condition of the corrosion prevention system and where spaces have structural arrangements or details which have suffered defects in similar spaces or on similar ships according to available information.~~

5.6 Thickness measurement

5.6.1 The general minimum requirements for thickness measurement are given in Table 3.5.3. For **general dry cargo ships**, the minimum requirements for thickness measurement are given in Table 3.5.5. ~~The Surveyor may extend the thickness measurements as deemed necessary.~~

5.6.3 In areas where substantial corrosion, as defined in 1.5, has been noted, then additional measurements are to be carried out, as applicable, in accordance with Table 3.5.6 to determine the full extent of the corrosion pattern. ~~The survey will not be considered complete until these additional thickness measurements have been carried out.~~

Table 3.5.4 Close-up Survey – General dry cargo ships (Part only shown)

Special Survey I (Ships 5 years old)	Special Survey II (Ships 10 years old)	Special Survey III (Ships 15 years old)	Special Survey IV and subsequent (Ships 20 years old and over)
(1) Selected shell frames in one forward and one aft cargo hold and associated 'tween deck spaces. (2) One selected cargo hold transverse bulkhead. (3) All cargo hold hatch covers and coamings (plating and stiffeners).	(6) Selected areas of all deck plating and underdeck structure inside the line of hatch openings between cargo hold hatches. (7) Selected areas of inner bottom plating.	(4) All transverse webs with associated plating and framing in each water ballast tank (i.e. topside, hopper side, side tank or double bottom tank). (6) All deck plating and underdeck structure inside the line of hatch openings between cargo hold hatches. (7) All areas of inner bottom plating.	(4) All transverse webs with associated plating and framing in each water ballast tank (i.e. topside, hopper side, side tank or double bottom tank). (6) All deck plating and underdeck structure inside the line of hatch openings between cargo hold hatches. (7) All areas of inner bottom plating.

Section 6

Special Survey – Bulk carriers – Hull requirements

6.2 Documentation

6.2.1 The Owner is to maintain documentation on board as follows:

- (a) A survey file comprising reports of structural surveys, thickness measurement and executive hull summary in accordance with IMO Resolution A.744(18).
- (b) Supporting documentation consisting of:
 - (i) Main structural plans of cargo holds and ballast tanks.
 - (ii) Previous repair history.
 - (iii) Cargo and ballast history.
 - (iv) Reports on structural defects/deterioration in general.
 - (v) Reports on leakage in bulkheads and piping systems.
 - (vi) Condition of ~~coatings or~~ corrosion prevention ~~systems~~ system, if any.
 - (vii) Information that may help to identify critical areas.
 - (viii) Survey Programme as required by 6.3.

The complete documentation in 6.2.1 is to be readily available for examination by the Surveyor and should be used as a basis for survey.

6.3 Planning for survey

~~6.3.1 A Survey Programme is to be prepared by the Owners at least six months in advance of the survey and submitted to LR for agreement.~~

~~6.3.2~~ 6.3.1 The A Survey Programme is to be submitted by the Owner and is to include the proposals for survey, including the means of providing access for Close-up Survey, thickness measurement and tank testing and should take ~~into account~~ account of the information detailed in 6.2.1.

6.6 Close-up Survey

6.6.2 The Close-up Survey may be extended, as deemed necessary by the Surveyor, after taking into account the maintenance of the spaces under survey, the condition of the corrosion prevention system and where spaces have structural arrangements or details which have suffered defects in similar spaces or on similar ships according to available information.

~~6.6.2~~ 6.6.3 For areas in tanks and cargo holds where coatings are found to be in GOOD condition, as defined in 1.5, the extent of Close-up Surveys may be specially considered.

6.7 Thickness measurement

6.7.2 In areas where substantial corrosion, as defined in 1.5, has been noted then additional measurements are to be carried out, as applicable, in accordance with Tables 3.6.4, 3.6.5, 3.6.6, 3.6.7, 3.6.8 and 3.6.9 to determine the full extent of the corrosion pattern. The survey will not be considered complete until these additional thickness measurements have been carried out.

Table 3.6.1 Close-up Survey – Single skin bulk carriers (Part only shown)

Special Survey I (Ships 5 years old)	Special Survey II (Ships 10 years old)	Special Survey III (Ships 15 years old)	Special Survey IV (Ships 20 years old and over)
(1) 25% of shell frames and their end attachments in the forward cargo hold at representative positions. (2) Selected shell frames and their end attachments in remaining cargo holds. (3) 1 transverse web with associated plating and longitudinals in 2 representative water ballast tanks of each type (i.e. topside, or hopper side or side tank).	(1) All shell frames in the forward cargo hold and 25% of frames in each of the remaining cargo holds, including their end attachments and adjacent shell plating. (2) 1 transverse web with associated plating and longitudinals in each water ballast tank (i.e. topside, hopper side or side tank).	(1) All shell frames in the forward and one other selected cargo hold and 50% of frames in each of the remaining cargo holds, including their end attachments and adjacent shell plating. (2) All transverse webs with associated plating and longitudinals in each water ballast tank (i.e. topside, hopper side or side tank).	(1) All shell frames in all cargo holds, including their end attachments and adjacent shell plating. (2) All transverse webs with associated plating and longitudinals in each water ballast tank (i.e. topside, hopper side or side tank).

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Table 3.6.2 Close-up Survey – Double skin bulk carriers *(Part only shown)*

Special Survey I (Ships 5 years old)	Special Survey II (Ships 10 years old)	Special Survey III (Ships 15 years old)	Special Survey IV (Ships 20 years old and over)
(1) 1 transverse web with associated plating and longitudinals in 2 representative water ballast tanks of each type. This is to include the foremost topside and double side ballast tanks on either side	(1) 1 transverse web with associated plating and longitudinals in each water ballast tank (i.e. topside, hopper side, double bottom, double side and peak tanks)	(1) All transverse webs with associated plating and longitudinals in each water ballast tank (i.e. topside, hopper side, double bottom, double side and peak tanks)	(1) All transverse webs with associated plating and longitudinals in each water ballast tank (i.e. topside, hopper side, double bottom, double side and peak tanks)

Section 7 Special Survey – Oil tankers (including ore/oil ships and ore/bulk/oil ships) – Hull requirements

7.2 Documentation

7.2.1 The Owner is to maintain documentation on board as follows:

- (a) A survey file comprising reports of structural surveys, thickness measurement and executive hull summary in accordance with IMO Resolution A.744(18).
- (b) Supporting documentation consisting of:
 - (i) Main structural plans of cargo tanks/cargo holds and ballast tanks.
 - (ii) Previous repair history.
 - (iii) Cargo and ballast history.
 - (iv) Reports on structural defects/deterioration in general.
 - (v) Reports on leakage in bulkheads and piping systems.
 - (vi) Condition of ~~coatings or~~ corrosion prevention ~~systems~~ system, if any.
 - (vii) Extent of use of inert gas plant and tank cleaning procedures when forming part of approved corrosion control system.
 - (viii) Information that may help to identify critical areas.
 - (ix) Survey Programme as required by 7.3.

The complete documentation in 7.2.1 is to be readily available for examination by the Surveyor and should be used as a basis for survey.

7.3 Planning for survey

~~7.3.1 A Survey Programme is to be prepared by the Owners at least six months in advance of the survey and submitted to LR for agreement.~~

~~7.3.2~~ 7.3.1 The A Survey Programme is to be submitted by the Owner and is to include the proposals for survey, including the means of providing access for Close-up Survey, thickness measurement and tank testing and should take account of the information detailed in 7.2.1.

7.4 Overall Survey

~~7.4.5 The extent of survey of combined salt water ballast/cargo tanks is to be evaluated based on the records of ballast history, the extent and condition of the corrosion protection system provided, and the extent of structural diminution (corrosion).~~

Existing paragraphs 7.4.6 to 7.4.9 have been renumbered 7.4.5 to 7.4.8.

Table 3.7.1 Tank testing requirements – Single hull and double hull oil tankers, ore/oil ships and ore/bulk/oil ships

Special Survey I (Ships 5 years old)	Special Survey II (Ships 10 years old)	Special Survey III and subsequently (Ships 15 years old and over)
All ballast tank boundaries Cargo tank boundaries facing ballast tanks, void spaces, pipe tunnels, oil fuel tanks, pump rooms or cofferdams	All ballast tank boundaries Cargo tank boundaries facing ballast tanks, void spaces, pipe tunnels, oil fuel tanks, pump rooms or cofferdams All cargo tank bulkheads which form the boundaries of segregated cargoes	All ballast tank boundaries Cargo tank boundaries facing ballast tanks, void spaces, pipe tunnels, oil fuel tanks, pump rooms or cofferdams All remaining cargo tank bulkheads
NOTE Tanks are to be tested by filling with water to the top of the hatchways.		

Table 3.7.1 Tank testing requirements – Single hull and double hull oil tankers, ore/oil ships and ore/bulk/oil ships

Special Survey I (Ships 5 years old)	Special Survey II and subsequent (Ships 10 years old and over)
All ballast tank boundaries Cargo tank boundaries facing ballast tanks, void spaces, pipe tunnels, pump rooms or cofferdams	All ballast tank boundaries All cargo tank bulkheads

Table 3.7.6 Thickness measurement – Single hull and double hull oil tankers, ore/oil ships and ore/bulk/oil ships
(Part only shown)

Special Survey I (Ships 5 years old)	Special Survey III (Ships 15 years old)	Special Survey IV (Ships 20 years old and over)
(1) 1 section of deck plating for the full beam of the ship within 0,5L amidships in way of a ballast tank, if any, or a cargo tank used primarily for water ballast. (2) Measurements for general assessment and recording of corrosion pattern of the structural members subject to Close-up Survey in accordance with Table 3.7.2, Table 3.7.3, Table 3.7.4 or Table 3.7.5. (3) Critical areas, as required by the Surveyor.	(1) Within the cargo tank length area: (a) Each deck plate. (b) 2 transverse sections, see Note 6. (2) Measurements for general assessment and recording of corrosion pattern of the structural members subject to Close-up Survey in accordance with Table 3.7.2, Table 3.7.3, Table 3.7.4 or Table 3.7.5. (3) Selected wind and water strikes outside the cargo tank length area. (4) All wind and water strikes with within the cargo tank length area. (5) All cargo hold hatch covers and coamings (plating and stiffeners), see Note 5. (6) All transverse webs with associated plating and longitudinals, and the transverse bulkhead complete in the fore peak tank, see Notes 1 and 4. (7) Critical areas, as required by the Surveyor.	(1) Within the cargo tank length area: (a) Each deck plate. (b) 3 transverse sections, see Note 6. (c) Each bottom plate. (2) Measurements for general assessment and recording of corrosion pattern of the structural members subject to Close-up Survey in accordance with Table 3.7.2, Table 3.7.3, Table 3.7.4 or Table 3.7.5. (3) All wind and water strikes over the full length of the ship, port and starboard. (4) All cargo hold hatch covers and coamings (plating and stiffeners), see Note 5. (5) Remaining exposed main deck plating not considered in item (1) and representative exposed superstructure deck plating (i.e. poop, bridge and forecastle deck). (6) All transverse webs with associated plating and longitudinals, and the transverse bulkhead complete in the fore peak tank and aft peak tank, see Notes 1 and 4. (7) All keel plates outside the cargo tank length. Also additional bottom plates in way of cofferdams, machinery space and aft end of tanks. (8) Plating of sea-chests. Also side shell plating in way of overboard discharges, as considered necessary by the Surveyor. (9) Critical areas, as required by the Surveyor.
Special Survey II (Ships 10 years old)		
(1) Within the cargo tank length area: (a) Each deck plate. (b) 1 transverse section, see Note 6. (2) Measurements for general assessment and recording of corrosion pattern of the structural members subject to Close-up Survey in accordance with Table 3.7.2, Table 3.7.3, Table 3.7.4 or Table 3.7.5. (3) Selected wind and water strikes outside the cargo tank length area. (4) Critical areas, as required by the Surveyor.		

Section 8

Special Survey – Chemical tankers – Hull requirements

8.2 Documentation

8.2.1 The Owner is to maintain documentation on board as follows:

- (a) A survey file comprising reports of structural surveys, thickness measurement and executive hull summary in accordance with IMO Resolution A.744(18).
- (b) Supporting documentation consisting of:
 - (i) Main structural plans of cargo tanks and ballast tanks.
 - (ii) Previous repair history.
 - (iii) Cargo and ballast history.
 - (iv) Reports on structural defects/deterioration in general.
 - (v) Reports on leakage in bulkheads and piping systems.
 - (vi) Condition of coatings or corrosion prevention systems system, if any.
 - (vii) Extent of use of inert gas plant and tank cleaning procedures when forming part of approved corrosion control system.
 - (viii) Information that may help to identify critical areas.
 - (ix) Survey Programme as required by 8.3.

The complete documentation in 8.2.1 is to be readily available for examination by the Surveyor and should be used as a basis for survey.

8.3 Planning for survey

8.3.1 A Survey Programme is to be prepared by the Owners at least six months in advance of the survey and submitted to LR for agreement.

8.3.2 8.3.1 The A Survey Programme is to be submitted by the Owner and is to include the proposals for survey, including the means of providing access for Close-up Survey, thickness measurement and tank testing and should take account of the information detailed in 8.2.1.

8.5 Testing

8.5.1 The minimum tank testing requirements are given in Table 3.8.1 and, where required, the at each Special Survey are as follows:

- (a) All ballast tank boundaries.
- (b) Cargo tank boundaries facing ballast tanks, void spaces, pipe tunnels, pump rooms or cofferdams.

The Surveyor may extend the tank testing if deemed necessary. Other arrangements for cargo tank testing will be considered on application. The remaining requirements for tank testing, as applicable, are given in 5.3.5.

8.7 Thickness measurement

8.7.2 In areas where substantial corrosion, as defined in 1.5, has been noted, then additional measurements are to be carried out, as applicable, in accordance with Tables 3.8.3, 3.8.4, 3.8.5, and 3.8.6 and 3.8.7 to determine the full extent of the corrosion pattern. The survey will not be considered complete until these additional thickness measurements have been carried out.

Table 3.8.1 Tank testing requirements – Chemical tankers

Special Survey I (Ships 5 years old)	Special Survey II (Ships 10 years old)	Special Survey III and subsequently (Ships 15 years old and over)
All ballast tank boundaries	All ballast tank boundaries	All ballast tank boundaries
Cargo tank boundaries facing ballast tanks, void spaces, pipe tunnels, oil fuel tanks, pump rooms or cofferdams	Cargo tank boundaries facing ballast tanks, void spaces, pipe tunnels, oil fuel tanks, pump rooms or cofferdams	Cargo tank boundaries facing ballast tanks, void spaces, pipe tunnels, oil fuel tanks, pump rooms or cofferdams
	All cargo tank bulkheads which form the boundaries of segregated cargoes	All remaining cargo tank bulkheads
NOTE Tanks are to be tested by filling with water to the top of the hatchways.		

Table 3.8.2 3.8.1 Close-up Survey – Chemical tankers

Table 3.8.3 3.8.2 Thickness measurement – Chemical tankers (Part only shown)

Special Survey I (Ships 5 years old)	Special Survey III (Ships 15 years old)	Special Survey IV (Ships 20 years old and over)
(1) 1 section of deck plating for the full beam of the ship within 0,5L amidships (in way of a ballast tank, if any) (2) Measurements for general assessment and recording of corrosion pattern of the structural members subject to Close-up Survey in accordance with Table 3.8.2 (3) Critical areas, as required by the Surveyor	(1) Within the cargo tank length area: (a) Each deck plate (b) 2 transverse sections (2) Measurements for general assessment and recording of corrosion pattern of the structural members subject to Close-up Survey in accordance with Table 3.8.2 (3) Selected wind and water strakes outside the cargo tank length area (4) All wind and water strakes within the cargo tank length area (5) All transverse webs with associated plating and longitudinals, and the transverse bulkhead complete in the fore peak tank, see Notes 1 and 4 (6) Critical areas, as required by the Surveyor	(1) Within the cargo tank length area: (a) Each deck plate (b) 3 transverse sections (c) Each bottom plate (2) Measurements for general assessment and recording of corrosion pattern of the structural members subject to Close-up Survey in accordance with Table 3.8.2 (3) All wind and water strakes over the full length of the ship, port and starboard (4) Remaining exposed main deck plating not considered in item (1) and representative exposed superstructure deck plating (i.e. poop, bridge and forecastle deck) (5) All transverse webs with associated plating and longitudinals, and the transverse bulkhead complete in the fore peak tank and aft peak tank, see Notes 1 and 4 (6) All keel plates outside the cargo tank length. Also additional bottom plates in way of cofferdams, machinery space and aft end of tanks (7) Plating of seachests. Also side shell plating in way of overboard discharges, as considered necessary by the Surveyor (8) Critical areas, as required by the Surveyor
Special Survey II (Ships 10 years old)		
(1) Within the cargo tank length area: (a) Each deck plate (b) 1 transverse section (2) Measurements for general assessment and recording of corrosion pattern of the structural members subject to Close-up Survey in accordance with Table 3.8.2 (3) Selected wind and water strakes outside the cargo tank length area (4) Critical areas, as required by the Surveyor		

Table 3.8.4 3.8.3 Thickness measurement – Chemical tankers – Bottom structure with substantial corrosion
Table 3.8.5 3.8.4 Thickness measurement – Chemical tankers – Deck structure with substantial corrosion
Table 3.8.6 3.8.5 Thickness measurement – Chemical tankers – Shell and longitudinal bulkheads with substantial corrosion
Table 3.8.7 3.8.6 Thickness measurement – Chemical tankers – Transverse bulkheads and swash bulkheads with substantial corrosion

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■ Section 9 Ships for liquefied gases

9.12 Thickness measurement

Table 3.9.2 Thickness measurement – Ships for liquefied gases (Part only shown)

Special Survey I (Ships 5 years old)	Special Survey III (Ships 15 years old)	Special Survey IV and subsequent (Ships 20 years old and over)
<p>(1) 1 section of deck plating for the full beam of the ship within 0,5L amidships in way of a ballast tank, if any</p> <p>(2) Measurements for general assessment and recording of corrosion pattern of the structural members subject to close-up survey in accordance with Table 3.9.1</p> <p>(3) Critical areas, as required by the Surveyor</p>	<p>(1) Within the cargo tank length area: (a) Each deck plate (b) 2 transverse sections</p> <p>(2) Measurements for general assessment and recording of corrosion pattern of the structural members subject to Close-up Survey in accordance with Table 3.9.1</p> <p>(3) Selected wind and water strakes outside the cargo tank length area</p> <p>(4) All wind and water strakes within the cargo tank length area</p> <p>(5) All transverse webs with associated plating and longitudinals, and the transverse bulkhead complete in the fore peak tank, see Notes 1 and 4</p> <p>(6) Critical areas, as required by the Surveyor</p>	<p>(1) Within the cargo tank length area: (a) Each deck plate (b) 3 transverse sections (c) Each bottom plate</p> <p>(2) Measurements for general assessment and recording of corrosion pattern of the structural members subject to Close-up Survey in accordance with Table 3.9.1</p> <p>(3) All wind and water strakes over the full length of the ship, port and starboard</p> <p>(4) Remaining exposed main deck plating not considered in item (1) and representative exposed superstructure deck plating (i.e. poop, bridge and forecastle deck)</p> <p>(5) All transverse webs with associated plating and longitudinals, and the transverse bulkhead complete in the fore peak tank and aft peak tank, see Notes 1 and 4</p> <p>(6) All keel plates outside the cargo tank length. Also additional bottom plates in way of cofferdams, machinery space and aft end of tanks</p> <p>(7) Plating of seachests. Also side shell plating in way of overboard discharges, as considered necessary by the Surveyor</p> <p>(8) Critical areas, as required by the Surveyor</p>
Special Survey II (Ships 10 years old)		
<p>(1) Within the cargo tank length area: (a) Each deck plate (b) 1 transverse section</p> <p>(2) Measurements for general assessment and recording of corrosion pattern of the structural members subject to Close-up Survey in accordance with Table 3.9.1</p> <p>(3) Selected wind and water strakes outside the cargo tank length area</p> <p>(4) Critical areas, as required by the Surveyor</p>		

Rules for the Manufacture, Testing and Certification of Materials

Chapter 4

Steel Castings

CORRIGENDUM

■ Section 5 Castings for propellers

5.1 Scope

5.1.4 Special requirements are given for castings which are intended for ice service in Table ~~4.5.1~~ 4.5.2.

Part 3, Chapter 11

Closing Arrangements for Shell, Deck and Bulkheads

Effective date 1 July 2006

■ Section 8

Side and stern doors and other shell openings

8.6 Design loads

(Part only shown)

8.6.1 The design force considered for the scantlings of primary members, securing and supporting devices of side shell doors and stern doors are to be taken not less than:

The symbols used are defined as follows:

For stern doors of ships fitted with bow doors, p_e is not to be taken less than:

$$p_{emin} = 0,6\lambda C_H (0,8 + 0,6L^{0,5})^2 \text{ kN/m}^2$$

$$(p_{emin} = 0,061\lambda C_H (0,8 + 0,6L^{0,5})^2 \text{ tonne-f/m}^2)$$

Part 3, Chapter 16

ShipRight Procedures for the Design, Construction and Lifetime Care of Ships

CORRIGENDUM

■ Section 5

Ship Event Analysis

5.1 Ship Event Analysis – Descriptive notes

SEA(HSS-n), SEA(VDR), SEA(VDR-n)

Part 4, Chapter 7

Bulk Carriers

Effective date 1 April 2006

■ Section 1

General

1.1 General

1.1.1 This Chapter applies to sea-going self propelled ships single deck ships, constructed generally with single deck, with a double bottom, hopper side tanks and topside tanks and with single or double side skin construction in the cargo length area, with machinery aft designed and intended primarily for the carriage of bulk dry cargoes.

CORRIGENDA

■ Section 6

Shell envelope framing

6.2 Transverse stiffening

Table 7.6.1 Shell framing

(Part only shown)

Symbols

D , T , s , k as defined in 1.5.4 1.7.1

Part 4, Chapters 7 & 8

■ Section 7 Topside tank structure

7.2 Bulkhead plating

(Part only shown)

7.2.1 The thickness of the sloped bulkhead, tank end bulkhead, and diaphragm, if fitted, is to be the greater of the following:

where

$$R = \text{as defined in 1.5.1 1.7.1}$$

7.3 Bulkhead stiffeners

(Part only shown)

7.3.1 The section modulus of longitudinal or transverse stiffeners on the sloped bulkhead or watertight diaphragms, if fitted, is to be not less than:

where

$$R = \text{as defined in 1.5.1 1.7.1}$$

■ Section 8 Double bottom structure

8.1 General

(Part only shown)

8.1.5 For all bulk carriers where bulk cargoes are discharged by grabs the maximum recommended unladen weight of the grab corresponding to the approved inner bottom plating thickness is to be calculated using the following formulae:

where

$$k = \text{higher tensile steel factor as defined in 1.5.1 1.7.1}$$

Table 7.8.1 Strengthening for heavy cargo requirements

(Part only shown)

Symbols

L , l_e , D , T , S , k , Z , and t as defined in 1.5.1 1.7.1

■ Section 9 Hopper side tank structure

9.6 Primary supporting structure

Table 7.9.1 Hopper tank primary structure

(Part only shown)

Symbols

S , k , l_e , Z , I , ρ as defined in 1.5.1 1.7.1

Part 4, Chapter 8 Container Ships

CORRIGENDUM

■ Section 15 Requirements for ships with large deck openings

15.6 Permissible stress

Table 8.15.2 Permissible stress

(Part only shown)

Top of continuous hatch coaming where fitted

~~$$\sigma_c = \frac{173}{k_L} \left(\frac{17,0}{k_L} \right)$$~~

$$\sigma_c = \frac{175}{k_L} \left(\frac{17,84}{k_L} \right)$$

Part 4, Chapter 9

Doyuble Hull Oil Tankers

CORRIGENDUM

- *Section 13*
Access arrangements and closing appliances

13.2 Access to spaces in the cargo area

13.2.2 Where a duct keel or pipe tunnel is fitted, and access is normally required for operational purposes, access is to be provided at each end and at least one other location at approximately mid-length. Access is to be directly from the exposed deck. Where an after access is to be provided from the pump room to the duct keel, the access manhole from the pump room to the duct keel is to be provided with an oiltight cover plate. Access is not to be via the engine room. Mechanical ventilation is to be provided and such spaces are to be adequately ventilated prior to entry. A notice-board is to be fitted at each entrance to the pipe tunnel stating that before any attempt is made to enter, the ventilating fan must have been in operation for an adequate period. In addition, the atmosphere in the tunnel is to be sampled by a reliable gas monitor, and where an inert gas system is fitted in cargo tanks, an oxygen monitor is to be provided.

Part 5, Chapter 23

Podded Propulsion Units

CORRIGENDUM

- *Section 8*
Control engineering arrangements

8.2 Monitoring and alarms

8.2.6 Condition monitoring arrangements are not to interface with the operation of safety systems which may cause slow-down or shut-down of the propulsion system. See also Ch 6, 1 and 2.6.9 Pt 6, Ch 1, 2.6.9.

Part 6, Chapter 2
Electrical Engineering

CORRIGENDUM

■ *Section 6*
System design – Protection

6.1 General

6.1.1 Installations are to be protected against over-currents including short-circuits, and other electrical faults. The tripping/fault clearance times of the protective devices are to provide complete and co-ordinated protection to ensure:

- (a) availability of essential and emergency services under fault conditions through discriminative action of the protective devices; as far as practicable the arrangements are also to secure the availability of other services;
- (b) elimination of the fault to reduce damage to the system and hazard of fire, ~~see 5.3.7.~~

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